

**What is claimed is:**

1. A method of recording data stream including multi-path stream section in a recording medium, comprising the steps of:

(a) recording data stream in a recording medium; and

5 (b) grouping multi-path stream section of the recorded data stream into a single stream object.

2. The method set forth in claim 1, further comprising the step of creating time entries having location information indicating each boundary position between stream segments of different path, and  
10 recording the created time entries.

3. The method set forth in claim 2, wherein said time entry further contains information notifying whether corresponding data stream interval is for multi-path or not.

4. The method set forth in claim 3, wherein said time entry  
15 further contains a path number if corresponding data stream interval is for multi-path.

5. The method set forth in claim 2, wherein said location information is an index number of a start stream object unit among stream object units constituting data stream interval associated  
20 with said time entry.

6. The method set forth in claim 1, further comprising the step of creating and recording time entries, each time entry having information on accumulated size and time length of preceding data stream before a data stream interval each time entry covers.

25 7. The method set forth in claim 6, wherein time length of a part of preceding data stream is summed in said accumulated time length information of each time entry, if path numbers of the part

of preceding data stream and corresponding data stream interval are same, whereas size of preceding data stream is summed in said accumulated size information of each time entry even if path numbers are not same.

5       8. The method set forth in claim 1, further comprising the step of creating time entry every a number of stream object units, and writing incremental size and time length of each of a number of stream object units in a corresponding time entry.

9. A method of searching data stream including multi-path  
10 stream section recorded in a recording medium, comprising the steps  
of:

      (a) searching for a time entry whose accumulated time length  
is closest to a target value when an searching operation is requested;  
      (b) checking whether a path information written in the time  
15 entry found in said step (a) is equal to an entered path number; and  
      (c) searching for a location of recorded data stream pointed  
by an accumulated size information written in the found time entry,  
based on the checked result.

10. The method set forth in claim 9, further comprising the step  
20 of reproducing recorded data stream from the location found in said  
step (c), and determining where of the reproduced data stream is an  
exact position of the target value.

11. The method set forth in claim 9, wherein said step (c)  
searches for a location of recorded data stream pointed by the  
25 accumulated size information with reference to a location  
information written in the found time entry.

12. The method set forth in claim 11, wherein said location

information is an index number of a stream object unit constituting the data stream interval corresponding time entry covers.

13. The method set forth in claim 9, wherein said step (a) searches for a time entry whose accumulated time length is smaller 5 than and closest to the target value.

14. A method of searching data stream including multi-path stream section recorded in a recording medium, comprising the steps of:

(a) summing up incremental time length and incremental size 10 written in each time entry;

(b) determining a time entry whose incremental time length makes the summed time length closest to a target value;

(c) checking whether a path information written in the determined time entry is equal to an entered path number; and

15 (d) searching for a location of recorded data stream close to a position of the target value, based on the checked result.

16. The method set forth in claim 14, wherein said step (d) searches for the location of recorded data stream with reference to a location information written in the determined time entry and the 20 summed time length subtracted by the incremental size of the determined time entry.

17. The method set forth in claim 15, wherein said location information is an index number of a stream object unit constituting the recorded data stream.

25 18. The method set forth in claim 14, further comprising the step of reproducing recorded data stream from the location found in said step (d), and determining where of the reproduced data stream

is an exact position of the target value.

18. The method set forth in claim 14, wherein said step (b) determines a time entry whose incremental time length makes the summed time length become larger than the target value.

5 19. The method set forth in claim 14, wherein said step (a) sums the incremental time length of each time entry whose path information is same if the time entry is for multi-path data stream, and sums the incremental sizes of all preceding time entries irrespective of path information.

10 20. A recording medium containing recorded data which are composed of a number of stream object units constituting data stream and a number of time entries, each having navigation information for each of several stream object units, wherein multi-path stream section of the data stream is grouped into a single stream object and there should be time entries having location information pointing each boundary between stream segments of different path which are located in the multi-path stream section.

15 21. The recording medium set forth in claim 20, wherein said time entry further contains path identifying data and information notifying whether data stream interval each time entry covers is for multi-path or not.

22. The recording medium set forth in claim 20, wherein said time entry contains accumulated time length and size of preceding data stream before a data stream interval said time entry covers.

25 23. The recording medium set forth in claim 20, wherein said time entry contains incremental time length and size of a data stream interval said time entry covers.